



BID ADDENDUM 01

CVTC: BUILDING #9 - RENOVATIONS

521

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012	
	PROJECT #	IFB #: 12-03	State PC: 720-174-004
Central Virginia Training Center			
	# ATTACHMENTS	YES	
TRASCO All Bidders Assigned Plans Rooms Owner			

CO Form #

BIDDING INFORMATION

NOTICE OF INVITATION FOR BIDS

Colony Road – Madison Heights, Virginia

OWNER

ISSUED TO

THE PROVISIONS OF THE CONTRACT DOCUMENTS FOR CONSTRUCTION OF THE ABOVE SHALL BE SUPERSEDED BY THE PROVISIONS OF THIS ADDENDUM, WHICH SHALL BECOME A PART OF THE CONTRACT DOCUMENTS.

SPECIFICATIONS

⑩ TABLE OF CONTENTS

- ○ *Delete original Table for Contents in it's entirety*
- ○ *Add "Revised" Table of Contents (copy attached)*
- ⑩ BID FORM
 - ○ *Delete original Bid Form in it's entirety*
 - ○ *Add "Revised" Bid Form (copy attached)*
- ⑩ SECTION: 054000 -COLD FORMED METAL FRAMING
 - ○ *Delete original Section 054000 – Cold-Formed Framing in it's entirety (Incorrect Footer Spec #)*
 - ○ *Add "Revised" Section 054000 – Cold-Formed Metal Framing (copy attached)*
- ⑩ SECTION: 085200 -WOOD WINDOWS
 - ○ *Delete original Section 085200 – Wood Windows in it's entirety (Not in Scope of Work)*
- ⑩ SECTION: 096516.13 -LINOLEUM FLOORING
 - ○ *Delete original Section 096516.13 – Linoleum Flooring in it's entirety (Not in Scope of Work)*
- ⑩ SECTION: 083113 -ACCESS DOORS AND FRAMES
 - ○ *Add Section 083113 – Access Doors and Frames in it's entirety (copy attached)*
- ⑩ SECTION: 092216 -NON-STRUCTURAL METAL FRAMING
 - ○ *Add Section 092216 – Non-Structural Metal Framing in it's entirety (copy attached)*
- ⑩ SECTION: 092900 -GYPSUM BOARD
 - ○ *Add Section 092900 – Gypsum Board in it's entirety (copy attached)*
- ⑩ SECTION: 132800 -ABATEMENT OF ASBESTOS CONTAINING MATERIALS
 - ○ *Add Section 132800 – Abatement of Asbestos Containing Materials (copy attached)*
- ⑩ SECTION: 132810 -BIRD DROPPING (GUANO) REMEDIATION PROCEDURES
 - ○ *Delete original Section 132810 Bird Dropping (Guano) Remediation Procedures in it's entirety*
 - ○ *Add "Revised" Section 132810 Bird Dropping (Guano) Remediation Procedures (copy attached)*



BID ADDENDUM 01

CVTC: BUILDING #9 - RENOVATIONS

521 Colony Road – Madison Heights, Virginia

DRAWINGS

(NOT APPLICABLE TO THIS ADDENDUM)

ATTACHMENTS

⑩ GENERAL INFORMATION :

- ○ *Pre-Bid Conference..... Sign-In Sheet*
- ○ *Pre-Bid Conference..... Meeting Notes*

• ⑩ SPECIFICATIONS

- ○ *Table of Contents (Revised)*
- ○ *Bid Form (Revised)*
- ○ *Section 054000 – Cold-Formed Metal Framing (Revised)*
- ○ *Section 083113 – Access Doors and Frames (Added)*
- ○ *Section 092216 – Non-Structural Metal Framing (Added)*
- ○ *Section 092900 – Gypsum Board (Added)*
- ○ *Section 132800 – Abatement of Asbestos Containing Materials (Added)*
- ○ *Section 132810 – Bird Dropping (Guano) Remediation Procedures (Revised)*



BID ADDENDUM 01

CVTC: BUILDING #9 - RENOVATIONS

PRE-BID QUESTIONS / AE RESPONSES

521 Colony Road – Madison Heights, Virginia

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⑩ WHAT IS THE INSULATION THICKNESS ON DUCT INSULATION ?

AE RESPONSE:

Duct Insulation is covered in Paragraphs 1 through 5 in Section 230700.2.2.A.

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⑩ THERE ARE SPEC SECTIONS INCLUDED IN THE PROJECT MANUAL, THAT DO NOT APPEAR TO BE INCLUDED IN THE TABLE OF CONTENTS. PLEASE ADVISE.

AE RESPONSE:

Table of Contents has been deleted and replaced with revised Table of Contents

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⑩ THE LIGHTNING PROTECTION SPECIFICATION IS LISTED IN THE TABLE OF CONTENTS, BUT IS NOT INCLUDED IN THE SPECIFICATIONS. PLEASE PROVIDE FOR PRICING.

AE RESPONSE:

*Table of Contents has been deleted and replaced with revised Table of Contents
(no longer includes Lightning Protection description)*

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⑩ WILL GYPSUM BOARD AND NON-STRUCTURAL METAL FRAMING SPECIFICATIONS BE PROVIDED ?

AE RESPONSE:

Yes – See attached copies of these specification sections under this Addendum.

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CENTRAL VIRGINIA TRAINING CENTER (CVTC) BUILDING #9 -RENOVATIONS STATE PROJECT CODE:
720-17457-004 / RRMM PROJECT #: 06153-01

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	PROJECT #	IFB #: 12-03 State PC: 720-174-004
Central Virginia Training Center		
TRASCO All Bidders Assigned Plans Rooms Owner	# ATTACHMENTS	YES

CO Form #
OF **BIDDING INFORMATION**
NOTICE OF INVITATION FOR BIDS

GENERAL
CONDITIONS
FORMS

GENERAL
CONDITIONS
THE

CONSTRUCTION CONTRACT CO-7 SUPPLEMENTAL GENERAL CONDITIONS --- LISTING OF REQUIRED
STRUCTURAL AND SPECIAL INSPECTIONS CO-6b CONTRACT BETWEEN OWNER AND CONTRACTOR CO-9
WORKERS COMPENSATION CERTIFICATE OF INSURANCE CO-9a STANDARD PERFORMANCE BOND, CO-10
STANDARD LABOR AND MATERIAL PAYMENT BOND CO-10.1 CONSTRUCTION CHANGE ORDER CO-11
CHANGE ORDER ESTIMATE (GENERAL CONTRACTOR) GC-1 CHANGE ORDER ESTIMATE (SUBCONTRACTOR)
SC-1 CHANGE ORDER ESTIMATE (SUB-SUBCONTRACTOR) SS-1 SCHEDULE OF VALUES AND CERTIFICATE
FOR PAYMENT CO-12 AFFIDAVIT OF PAYMENT OF CLAIMS CO-13 CERTIFICATE OF COMPLETION BY
ARCHITECT/ENGINEER OR PROJECT MANAGER CO-13.1 ARCHITECT/ENGINEER'S CERTIFICATE OF
SUBSTANTIAL COMPLETION CO-13.1a FINAL REPORT OF STRUCTURAL & SPECIAL INSPECTIONS CO-13.1b
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SPECIFICATIONS

SECTION DIVISION 1 - GENERAL REQUIREMENTS LIST OF DRAWINGS

DIVISION 2 – EXISTING

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012	CONDITIONS
	PROJECT #	IFB #: 12-03 720-174-004	State P(
Central Virginia Training Center			024113 SELECTIVE SITE
			DEMOLITION 024119
TRASCO All Bidders Assigned Plans Rooms Owner	# ATTACHMENTS	YES	SELECTIVE BUILDING
			DEMOLITION

CO Form #

DIVISION 3 - CONCRETE

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PREBID QUESTION FORM

BID FORM

010200 GENERAL SITEWORK REQUIREMENTS

011000 SUMMARY

012600 CONTRACT MODIFICATION PROCEDURES

012900 PAYMENT PROCEDURES

013100 PROJECT MANAGEMENT AND COORDINATION

013200 CONSTRUCTION PROGRESS DOCUMENTATION

013300 SUBMITTALS PROCEDURES

014000 QUALITY REQUIREMENTS

014100 SPECIAL REQUIREMENTS SERVICES

CO-7A 033000 CAST-IN-PLACE
CO-10.2
---CONCRETE

DIVISION 4 - MASONRY

040120 MASONRY
RESTORATION AND CLEANING
042000 UNIT MASONRY

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DIVISION 5 - METALS

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012
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Central Virginia Training Center	<u>DIVISION 6 – WOOD, PLASTICS AND COMPOSITES</u>	
	# ATTACHMENTS	YES

061000 ROUGH CARPENTRY 061600 SHEATHING 064023 INTERIOR ARCHITECTURAL WOODWORK

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

072100 THERMAL INSULATION 072300 SPRAY-IN-PLACE INSULATION (MASONRY WALLS) 072500 WEATHER BARRIERS 073113 ASPHALT SHINGLES 076200 SHEET METAL FLASHING AND TRIM 077200 ROOF ACCESSORIES 078413 PENETRATION FIRESTOPPING 079200 JOINT SEALANTS

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DIVISION 8 - OPENINGS

081113 HOLLOW METAL DOORS AND FRAMES 081416 FLUSH WOOD DOORS 081433 STILE AND RAIL WOOD DOORS 083113 ACCESS DOORS AND FRAMES 085113 ALUMINUM WINDOWS (OPERABLE) 085114 ALUMINUM WINDOWS (FIXED) 087100 DOOR HARDWARE 088000 GLAZING

DIVISION 9 - FINISHES

093000 TILING 095113 ACOUSTICAL PANEL CEILINGS 095123 ACOUSTICAL TILE CEILINGS 096513 RESILIENT BASE AND ACCESSORIES 096516 RESILIENT SHEET FLOORING 096516.13 LINOLEUM FLOORING

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DIVISION 9 – FINISHES
(CONTINUED)

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012
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Central Virginia Training Center	# ATTACHMENTS	YES
TRASCO All Bidders Assigned Plans Rooms Owner		

DIVISION 10 - SPECIALTIES

102113 TOILET
COMPARTMENTS 102123
CUBICLES 102600 WALL AND DOOR PROTECTION 102800 TOILET, BATH, AND LAUNDRY ACCESSORIES
104413 FIRE EXTINGUISHER CABINETS 104416 FIRE EXTINGUISHERS 105113 METAL LOCKERS

DIVISION 11 - EQUIPMENT 117101 CEILING MOUNTED LIFTS

DIVISION 12 - FURNISHINGS 122413 ROLLER WINDOW SHADES

DIVISION 13 - SPECIAL CONSTRUCTION

132800 ABATEMENT OF ASBESTOS CONTAINING MATERIALS 132810 BIRD DROPPING (GUANO)
REMEDATION PROCEDURES

DIVISION 14 - CONVEYING SYSTEMS NOT USED

DIVISION 21 - FIRE EXTINGUISHING SPRINKLER SYSTEMS 211313 FIRE EXTINGUISHING SPRINKLER
SYSTEMS (WET PIPE)

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DIVISION 22 - PLUMBING

220000 PLUMBING 226300 MEDICAL GAS SYSTEM

DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING

230000 MECHANICAL GENERAL PROVISIONS 230500.1 BASIC MATERIALS AND METHODS 230523 HVAC VALVES 230529 SUPPORTS, HANGERS, ANCHORS, AND SLEEVES 230593 ADJUSTING, BALANCING AND SYSTEM TESTING 230700 INSULATION 230800 MECHANICAL SYSTEM COMMISSIONING 230923 DIRECT DIGITAL CONTROL SYSTEMS 230990 BUILDING AUTOMATION SYSTEM COMMISSIONING 232000 HVAC PUMPS 232101 HVAC AIR CONTROL AND TANKS 232113 HVAC PIPE AND PIPE FITTINGS 232113.1 HVAC PIPING SPECIALTIES 233100 DUCTWORK 233101 SHEET METAL ACCESSORIES 233400 FANS 233600 AIR TERMINAL UNITS 235240 GAS FIRED HIGH EFFICIENCY BOILERS 233713 GRILLES, REGISTERS AND DIFFUSERS 237313 AIR HANDLING UNITS 238239 UNIT HEATERS (ELECTRIC) 238240 UNIT HEATERS (HOT WATER)

DIVISION 26 - ELECTRICAL

260500 ELECTRICAL GENERAL PROVISIONS 260519 CONDUCTORS 260533 RACEWAY, FITTINGS AND BOXES 262416 PANELBOARDS 262726 WIRING DEVICES 262816 SAFETY SWITCHES 263113.13 BACK-UP POWER SYSTEM (DIESEL) 264300 SURGE PROTECTIVE DEVICES (SPD) 265000 LIGHTING FIXTURES

DIVISION 27 – COMMUNICATIONS

270528.33 TELEPHONE CONDUIT SYSTEMS 275223 NURSE CALL / CODE BLUE SYSTEMS

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DIVISION 28 – ELECTRONIC SAFETY AND SECURITY 283100 ADDRESSABLE FIRE DETECTION AND ALARM
SYSTEM

DIVISION 31 – EARTHWORK 311000 SITE CLEARING 312500 EROSION CONTROL

DIVISION 32 – EXTERIOR IMPROVEMENTS

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 201	DIVISION 33 – UTILITIES NOT USED
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	Central Virginia Training Center	720-174-004				
		# ATTACHMENTS	YES			
	TRASCO All Bidders Assigned Plans Rooms Owner					

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STANDARD BID BOND FORM

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BID FORM

010200 GENERAL SITEWORK REQUIREMENTS

011000 SUMMARY

012600 CONTRACT MODIFICATION PROCEDURES

012900 PAYMENT PROCEDURES

013100 PROJECT MANAGEMENT AND COORDINATION

013200 CONSTRUCTION PROGRESS DOCUMENTATION

compliance with and subject to your Invitation for Bids and the documents therein specified, all of which are incorporated herein by reference, the undersigned bidder proposes to furnish all labor, equipment, and materials and perform all work necessary for construction of this project, in accordance with the Plans and Specifications dated February 14th, 2012, and the Addenda noted below, as prepared by RRMM Architects, 1317 Executive Boulevard, Suite 200, Chesapeake, Virginia 23320 for the consideration of the following amount:

1. BASE BID:

Lump sum price for Central Virginia Training Center Building No. 9 Renovations with related work in accordance with the drawings, specifications and unit quantities & prices indicated below.

BASE BID AMOUNT:

Dollars

()

Contract award will be based on the TOTAL BASE BID AMOUNT below (including properly submitted bid modifications).

2. UNIT PRICES The extent of removal and replacement work indicated in the contract drawings and specifications, is included

in the Base Bid above. The unit quantities indicated below shall be utilized at the discretion of the Owner, for areas of work that may exceed the work shown on the drawings and specifications. The unit prices shall be utilized, to add to or credit the total price, based on actual measured quantities authorized, whether it be above or below the extent of work required in the contract drawings and specifications. The total unit prices indicated shall represent all associated work (testing, identification, demolition, removal, preparation of new work, installation of work, finishes final testing and close-out requirements).

PART A – EXCAVATION AND REPLACEMENT OF EXISTING SLAB ON GRADE:

Saw cut existing building floor slab-on-grade, and replace floor slab per Specification Section 033000 Cast-In-Place Concrete , (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (500) square feet @ \$ per SF = \$ **TOTAL PART A**

PART B – SUITABLE SOIL BACKFILL:

The existing soil material may not be suitable for backfill for utility trenching, foundations and concrete slab-on-grade placement. Provide and place suitable soil backfill per Section 033000 Cast-In-Place Concrete (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (100) cubic yards @ \$ per CY = \$ **TOTAL PART B**

PART C – CONCRETE FLOOR LEVELING:

The existing concrete slab-on-grade is sloped to existing floor drains which are no longer required. Provide new concrete floor leveling per Section 033000 Cast-In-Place Concrete. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (3,000) square feet @ \$ per SF = \$ **TOTAL PART C**

PART D – FIRESTOPPING:

The existing building contains pipe and duct penetrations through fire walls that are currently concealed. Provide firestopping systems in these affected areas per Section 078413 Penetration Fire Stopping. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (50) Penetrations @ \$ per Penetration = \$ **TOTAL PART D**

PART E. – GUANO ABATEMENT (SPECIFICATION SECTION 13281):

The existing building contains bird/animal guano on the attic floor space and within the chimney flues that requires removal. Building No. 9 has 100 square feet on Attic Floor and 300 square feet within one (1) chimney flue. Provide Gauano Abatement per Specification Section 13281. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (400) square feet @ \$ per SF = \$ **TOTAL PART E**

PART F – ASBESTOS ABATEMENT:

The existing building contains ACM's, identified in Owner's report located within pipe insulation, storage tank jackets and exterior window glazing. Such product may exist within wall/ceiling plaster material. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (3,600) square feet Floor Tile @ \$ per SF = \$

Estimated quantity (1,000) linear feet Pipe Insulation @ \$ per LF = \$ (Fittings considered one [1] lineal foot).

Estimated quantity (250) square feet Storage Tank Jacket @ \$ per SF = \$

Estimated quantity (200) Window Glazing @ \$ per Window = \$

= \$ **TOTAL PART F**

PART G – EXTERIOR BRICK CLEANING AND MORTAR JOINT POINTING;

The existing exterior brick shall be cleaned, and mortar joints repointed in accordance with Specification Section 040120 – Masonry Restoration and Cleaning. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (25,000) square feet Brick Cleaning @ \$ per SF = \$

Estimated quantity (2,500) square feet Brick Mortar Repointing @ \$ per Window = \$

PART H – ROCK EXCAVATION;

Excavate and replace with new compacted backfill, per Specification Section 033000 Cast-in-Place Concrete. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (100) square yards @ \$ per SY = \$ **TOTAL PART H**

PART J – EXCAVATION AND REPLACEMENT OF EXISTING 12" THICK CONCRETE GRADE BEAM AND SLAB :

The existing building may contain 12" thick reinforced concrete grade beam and slab in some areas. Saw cut existing concrete reinforced grade beam and slab-on-grade, and replace with suitable backfill and concrete floor slab to match existing, per Specification (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (4000) square feet @ \$ per SF = \$ **TOTAL PART J**

PART K – EXCAVATION AND REPLACEMENT OF EXISTING SIDEWALKS:

Saw cut existing concrete sidewalks, excavate and replace with compacted backfill and new 4 inch thick concrete walk(s), per Specification Section 321313 Site Concrete (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (1,000) square feet @ \$ per SF = \$ **TOTAL PART K**

PART L – EXCAVATION AND REPLACEMENT OF EXISTING PAVEMENT:

Saw cut existing pavement sections, excavate and replace with compacted backfill and new pavement section as per typical details provided on civil drawings, per Specification Section 321216 Asphalt Pavement. (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (250) square yards @ \$ per SY = \$ **TOTAL PART L**

PART M – REMOVE AND HAUL OFF EXISTING MISC PLATE STEEL IN ATTIC AREAS:

Remove existing excess misc plate steel in attic areas at locations where directed by Architect after additional field inspection (Final amount shall be adjusted upward or downward based on actual quantity authorized).

Estimated quantity (80 hours) labor @ \$ per hr = \$ **TOTAL PART M**

TOTAL BASE BID AMOUNT (For PARTS; A, B, C, D, E, F, G, H, J, K, L and M) IS:

DOLLARS (\$) (Total is to be added to and is included in the Total Base Bid Amount above).

The bidder has relied upon the following public historical climatological records of the National Oceanographic and Atmospheric Administration for Lynchburg, Virginia.

The undersigned understands that time is of the essence and agrees that the time for Substantial Completion of the entire project shall be three hundred fifty (350) consecutive calendar days from the date of commencement of the Work as specified in the Notice to Proceed, and Final Completion shall be achieved within thirty (30) consecutive calendar days after the date of Substantial Completion as determined by the A/E.

The undersigned also understands that during construction of this project, interruption of operation of adjacent Building Nos. 8, 10, 11 and 12 is not acceptable.

Acknowledgment is made of receipt of the following Addenda:

. If notice of acceptance of this bid is given to the undersigned within thirty (30) days after the date of opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will execute and deliver a contract in the prescribed form (Commonwealth of Virginia Contract Between Owner and Contractor,

Form CO-9) within ten (10) days after the contract has been presented to him for signature. The required payment and performance bonds, on the forms prescribed, shall be delivered to the Owner along with the signed Contract.

Immigration Reform and Control Act of 1986: The undersigned certifies that it does not and will not during the performance of the Contract for this project violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.

DISQUALIFICATION OF CONTRACTORS: By signing this bid or proposal, the undersigned certifies that this Bidder or any officer, director, partner or owner is not currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, or any public body or agency of another state, or any agency of the federal government, nor is this Bidder a subsidiary or affiliate of any firm/corporation that is currently barred from bidding on contracts by any of the same. We have attached an explanation of any previous disbarment(s) and copies of notice(s) of reinstatement(s).

Either the undersigned or one of the following individuals, if any, is authorized to modify this bid prior to the deadline for receipt of bids by writing the modification and signing his name on the face of the bid, on the envelope in which it is enclosed, on a separate document, or on a document which is telefaxed to the Owner:

I certify that the firm name given below is the true and complete name of the bidder and that the bidder is legally qualified and licensed by the Virginia Department of Professional and Occupational Regulation, Board for Contractors, to perform all Work

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012	
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Central Virginia Training Center		720-174-004	
	# ATTACHMENTS	YES	
TRASCO All Bidders Assigned Plans Rooms Owner			

CO Form #

BIDDING INFORMATION

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PREBID QUESTION FORM

CO-7A
CO-10.2

included in the scope of the Contract.

corporation, affix Corporate Seal & list State of Incorporation State: (Affix Seal)

Business Address:

Telephone # FAX #

END OF BID FORM

SECTION 044000 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Exterior non-load-bearing wall framing.

1.3 SUBMITTALS

- A. Product Data: For each type of cold-formed metal framing product and accessory indicated.
- B. LEED Submittal:
 - 1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
- C. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
- D. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.
- B. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."
- C. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."

CENTRAL VIRGINIA TRAINING CENTER (CVTC) BUILDING #9 -RENOVATIONS STATE PROJECT CODE:
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1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:

- 1 Grade: ST33H as indicated.
- 2 Coating: G60.

2.2 EXTERIOR NON-LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:

- 1 Minimum Base-Metal Thickness: As indicated.
- 2 Flange Width: As indicated.

- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:

- 1 Minimum Base-Metal Thickness: As indicated.
- 2 Flange Width: As indicated.

2.3 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:

- 1 Supplementary framing.
- 2 Bracing, bridging, and solid blocking.
- 3 Anchor clips.
- 4 End clips.

CENTRAL VIRGINIA TRAINING CENTER (CVTC) BUILDING #9 -RENOVATIONS STATE PROJECT CODE:
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ANCHORS, CLIPS, AND FASTENERS

- A. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.
- B. Mechanical Fasteners: ASTM C 1413, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
 - 1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- C. Welding Electrodes: Comply with AWS standards.

2.4 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A780.

2.6 FABRICATION

- A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
 - 1. Fabricate framing assemblies using jigs or templates.
 - 2. Cut framing members by sawing or shearing; do not torch cut.
 - 3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
 - 4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening as indicated.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

COLD-FORMED METAL FRAMING 041200 -3

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2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Install load bearing shims or grout between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.

3.3 INSTALLATION, GENERAL

- A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing -General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop-or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.
 1. Cut framing members by sawing or shearing; do not torch cut.
 2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

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- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Install insulation, specified in Division 07 Section "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- H. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.
- I. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- B. Fasten both flanges of studs to top and bottom track, unless otherwise indicated. Space studs as indicated.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
- E. Install horizontal bridging in wall studs, spaced as indicated. Fasten at each stud intersection.
 - 1 Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
 - 2 Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
- F. Install miscellaneous framing and connections, including clip angles, anchors, and fasteners to provide a complete and stable wall-framing system.

3.4 SPECIAL INSPECTIONS

- A. Special Inspections and tests shall be performed by the Special Inspector or Special Inspection Agency.
- B. Verification and inspection of steel construction shall be in accordance with Table 1704.3 of VUSBC 2006, and as follows:
 - 1 Welding: Welding inspection shall be in compliance with AWS D1.3.
 - 2 Details: Perform an inspection of the steel framing to verify compliance with the details shown on the approved construction documents such as bracing, stiffening, member locations and proper application of joint details at each connection.
- C. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.
- D. Additional testing performed to determine compliance of corrected work with specified requirements shall be at Contractor's expense.

3.6 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 044000

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Access doors and frames for walls and ceilings, including locations where required by code in wall partitions that extend from floor to underside of roof deck (to provide access to all spaces above ceilings that would otherwise be considered concealed spaces).

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, fire ratings, materials, individual components and profiles, and finishes.

B. Shop Drawings:

- 1 Include plans, elevations, sections, details, and attachments to other work.
- 2 Detail fabrication and installation of access doors and frames for each type of substrate.

C. Samples: For each door face material, at least 3 by 5 inches (75 by 125 mm) in size, in specified finish.

D. Product Schedule: Provide complete access door and frame schedule, including types, locations, sizes, latching or locking provisions, and other data pertinent to installation.

1.4 LEED SUBMITTALS

- A. Product Data for LEED: Indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.

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PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Medium Security Rated Access Doors and Frames: Units complying with NFPA 80 that are identical to access door and frame assemblies tested for fire-test-response characteristics according to the following test method and that are listed and labeled by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

- 1 NFPA 252 or UL 10B for fire-rated access door assemblies installed vertically.
- 2 NFPA 288 for fire-rated access door assemblies installed horizontally.

2.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

A. Source Limitations: Obtain each type of access door and frame from single source from single manufacturer.

B. Security / Fire Rated Flush Access Doors

1. Basis-of-Design Product: Prefinished Metal Door & Frame Access Panel System (Medium Security Rated – Flush Type), Model # MTS as manufactured by Nystrom, or comparable product that meets or exceeds the minimum Basis of Design Product standards by one of the following manufacturers:

- a. Babcock-Davis.
- b. Cendrex Inc.
- c. Jensen Industries; Div. of Broan-Nutone, LLC.
- d. J. L. Industries, Inc.; Div. of Activar Construction Products Group.

2. Assembly Description: Fabricate door to fit flush to frame. Provide manufacturer's standard-width exposed 1 inch flange, proportional to door size.

3. Fire-Resistance Rating: As per the specified wall assembly fire ratings indicated on drawings (but not less than 1 hour).

4. Door: Fabricate from 12-gauge cold rolled sheet steel

5. Temperature-Rise Rating: 250 deg F (139 deg C) at the end of 30 minutes

6. Locations Ceiling - where indicated on drawings

7. Door Size: 32" x 32"

8. Metallic-Coated Steel Sheet for Door: Nominal 0.079 inch (2.01 mm), 14 gage.

a. Finish: Rust inhibiting factory primer with electrostatic powder baked white enamel finish.

9. Frame Material: Same material, thickness, and finish as door

10. Hinges: Manufacturer's standard continuous concealed piano security hinge

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C. Hardware:

1. Lock: Cylinder lock and special pinned allen headed security cam latch system.

2.3 MATERIALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.

C. Steel Sheet: Uncoated or electrolytic zinc coated, ASTM A 879/A 879M, with cold-rolled steel sheet substrate complying with ASTM A 1008/A 1008M, Commercial Steel (CS), exposed.

D. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

E. Rolled-Stainless-Steel Floor Plate: ASTM A 793, manufacturer's standard finish.

F. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, [Type 304] [Type 316]. Remove tool and die marks and stretch lines or blend into finish.

G. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.

H. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.

I. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of Alloy 5005-H15; with minimum sheet thickness according to ANSI H35.2 (ANSI H35.2M).

J. Frame Anchors: Same type as door face.

K. Inserts, Bolts, and Anchor Fasteners: Phosphate dipped with factory applied prime coat

2.4 FABRICATION

A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.

B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access doors to types of supports indicated.

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- 1 For concealed flanges with drywall bead, provide edge trim for gypsum board and gypsum base securely attached to perimeter of frames.
- 2 For concealed flanges with plaster bead for full-bed plaster applications, provide zinc-coated expanded metal lath and exposed casing bead welded to perimeter of frames.
- 3 Provide mounting holes in frames for attachment of units to metal or wood framing.
- 4 Provide mounting holes in frame for attachment of masonry anchors.

D. Recessed Access Doors: Form face of panel to provide recess for application of applied finish. Reinforce panel as required to prevent buckling.

1. For recessed doors with plaster infill, provide self-furring expanded metal lath attached to door panel.

E. Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.

1. For cylinder locks, furnish two keys per lock and key all locks alike.

2.5 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Install doors flush with adjacent finish surfaces or recessed to receive finish material.

ADJUSTING

- A. Adjust doors and hardware, after installation, for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 083113

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED Submittals:

- 1 Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
- 2 Product Data for Credit MR 5.1 and Credit MR 5.2: For products manufactured within 500 miles of project site, documentation indicating manufacturing locations. Include statement indicating costs for each product manufactured within 50 miles of project site.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than **25** percent.

B. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.

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2. Protective Coating: ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.

C. Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners.

1. Steel Studs and Runners:

- a. Minimum Base-Metal Thickness: 0.033 inch.
- b. Depth: As indicated on Drawings.

2. Dimpled Steel Studs and Runners:

- a. Minimum Base-Metal Thickness: 0.025 inch.
- b. Depth: As indicated on Drawings.

D. Slip-Type Head Joints: Where indicated, provide one of the following:

- 1 Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
- 2 Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track. 2) Steel Network Inc. (The); VertiClip SLD or VertiTrack VTD Series. 3) Superior Metal Trim; Superior Flex Track System (SFT).

E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: 0.027 inch.

F. Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.

- 1 Depth: 1-1/2 inches.
- 2 Clip Angle: Not less than 1-1/2 by 1-1/2 inches thick, galvanized steel.

G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

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- 1 Minimum Base-Metal Thickness: 0.033 inch.
- 2 Depth: As indicated on Drawings.

H. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.

- 1 Depth: As indicated on Drawings.
- 2 Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch.
- 3 Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

2.2 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

B. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch and minimum 1/2-inch-wide flanges.

1. Depth: As indicated on Drawings.

D. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Armstrong World Industries, Inc.; Drywall Grid Systems.
- b. Chicago Metallic Corporation; Drywall Grid System.
- c. USG Corporation; Drywall Suspension System.

2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide the following:

1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
 - 1 Single-Layer Application: 16 inches o.c. unless otherwise indicated.
 - 2 Multilayer Application: 16 inches o.c. unless otherwise indicated.
 - 3 Tile Backing Panels: 16 inches o.c. unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2 inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

E. Direct Furring:

1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

- 1 Hangers: 48 inches o.c.
- 2 Carrying Channels (Main Runners): 48 inches o.c.
- 3 Furring Channels (Furring Members): 24 inches o.c.

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B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

1 Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.

2 Do not attach hangers to steel roof deck.

3 Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.

4 Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.

5 Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1 Interior gypsum board.
- 2 Exterior gypsum board for ceilings and soffits.
- 3 Tile backing panels.

B. Related Requirements:

- 1 Section 061600 "Sheathing" for gypsum sheathing for exterior walls.
- 2 Section 092216 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.
- 3 Section 093000 "Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED Submittals:

- 1 Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
- 2 Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regional materials, certificates indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating distance to Project, cost for each regional material, and fraction by weight that is considered regional.
- 3 Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regionally manufactured and regionally extracted and manufactured materials. Include statement indicating cost for each regionally manufactured material.

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- a. Include statement indicating location of manufacturer and distance to Project for each regionally manufactured material.
- b. Include statement indicating location of manufacturer and point of extraction, harvest, or recovery for each raw material used in regionally extracted and manufactured materials. Indicate distance to Project and fraction by weight of each regionally manufactured material that is regionally extracted.

1 Product Data for Credit IEQ 4.1: For adhesives used to laminate gypsum board panels to substrates, documentation including printed statement of VOC content.

2 Laboratory Test Reports for Credit IEQ 4: For adhesives used to laminate gypsum board panels to substrates, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch-long length for each trim accessory indicated.

1.4 QUALITY ASSURANCE

A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for the following:

- a. Each level of gypsum board finish indicated for use in exposed locations.

- 1 Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.

- 2 Simulate finished lighting conditions for review of mockups.

- 3 Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
 - B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
 - C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
- 1 Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
- 2 Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- C. Low-Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.2 GYPSUM BOARD, GENERAL

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 75 percent.
- B. Regional Materials: Gypsum panel products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.
- C. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

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ADDENDUM #01 – 03/12/12

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INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Georgia-Pacific Gypsum LLC.
- b. National Gypsum Company.
- c. USG Corporation.

B. Gypsum Wall & Ceiling Board: ASTM C 1396/C 1396M.

- 1 Thickness / Core: 5/8 inch
- 2 Long Edges: Tapered.

C. Abuse-Resistant Gypsum Board: ASTM C 1396

- 1 Thickness / Core: 5/8 inch, Type X.
- 2 Long Edges: Tapered.
- 3 Mold Resistance: ASTM D 3273, score of 10.
- 4 Surface Abrasion Resistance: 0.009 inch when tested in accordance with ASTM D 4977 Standard Test Method for Granule Adhesion to Mineral Surfaced Roofing by Abrasion.
- 5 Indentation Resistance: 0.132 inch when tested in accordance with ASTM D 5420 Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact).
- 6 Soft Body Impact: 210 ft-lbf when tested in accordance with ASTM E 695 Standard Method for Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading.

D. Impact-Resistant Gypsum Board: ASTM C 1396, Type X and ASTM C 630

- 1 Thickness / Core: 5/8 inch, Type X
- 2 Additives to enhance resistance to fire, indentation and impact.
- 3 Long Edges: Tapered.
- 4 Mold Resistance: ASTM D 3273, score of 10.
- 5 Surface Paper: Abrasion resistant, 100% recycled content, moisture, mold, mildew resistant paper on front, back and long edges.
- 6 Embedded fiberglass mesh reinforcing
- 7 Surface Abrasion Resistance: [0.126 inch, maximum] [0.009 inch] when tested in accordance with ASTM D 4977 Standard Test Method for Granule Adhesion to Mineral Surfaced Roofing by Abrasion
- 8 Indentation Resistance: 0.150 inch, maximum when tested in accordance with ASTM D 5420 Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact)

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9. Soft Body Impact: 540 ft-lbf when tested in accordance with ASTM E 695 Standard Method for Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading.
10. Hard Body Impact: 160 ft-lbf in accordance with ASTM C 1629

2.4 GYPSUM BOARD FOR CEILINGS AND SOFFITS

A. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Georgia-Pacific Gypsum LLC.
- b. National Gypsum Company.
- c. USG Corporation.

2. Core: As indicated.

2.5 TILE BACKING PANELS

A. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. CertainTeed Corp.; GlasRoc Tile Backer.
- b. Georgia-Pacific Gypsum LLC; DensShield Tile Backer.

- 1 Core: 5/8 inch, regular type.
- 2 Mold Resistance: ASTM D 3273, score of 10.

B. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or 1325, with manufacturer's standard edges.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. CertainTeed Corp.; FiberCement BackerBoard.
- b. National Gypsum Company, Permabase Cement Board.
- c. USG Corporation; DUROCK Cement Board.

- 1 Thickness: 5/8 inch.
- 2 Mold Resistance: ASTM D 3273, score of 10.

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4. Locations: Provide in bathrooms receiving tile finishes.

2.6 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. L-Bead: L-shaped; exposed long flange receives joint compound.
 - d. Expansion (control) joint.
 - e. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Exterior Trim: ASTM C 1047.

1. Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.
3. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221 (ASTM B 221M), Alloy 6063-T5.
4. Finish: Extruded aluminum alloy 6063 T5, with clear anodized finish.

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

- 1 Interior Gypsum Board: Paper.
- 2 Exterior Gypsum Soffit Board: Paper.
- 3 Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
- 4 Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.

- 1 Fill Coat: For second coat, use drying-type, all-purpose compound.
- 2 Finish Coat: For third coat, use drying-type, all-purpose compound.
- 3 Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

D. Joint Compound for Exterior Applications:

- 1 Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
- 2 Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

- 1 Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- 2 Recycled Content of Blankets: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 45 percent.

D. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

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1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
- b. Grabber Construction Products; Acoustical Sealant GSC.
- c. Pecora Corporation; AC-20 FTR or AIS-919.
- d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
- e. USG Corporation; SHEETROCK Acoustical Sealant.

2. Acoustical joint sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."

F. Vapor Retarder: As specified in Division 07 Section "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a tight contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc., except in chases braced internally).

1 Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.

2 Fit gypsum panels around ducts, pipes, and conduits.

3 Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1 Wallboard Type – Non-Rated Assemblies: 5/8 inch

2 Wallboard Type – Fire Rated Assemblies: 5/8 inch - Type 'X'

3 Wallboard Type – Receiving Tile Finishes:

4 Flexible Type: Apply in double layer at curved assemblies.

5 Ceiling Type – Non-Rated Assemblies: 5/8 inch - Cementitious Backer Board

6 Ceiling Type – Fire Rated Assemblies: 5/8 inch - Type 'X'

7 Glass-Mat Interior Type: 5/8 inch at curved partitions receiving tile finishes.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.

2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

a. Stagger abutting end joints not less than one framing member in alternate courses of panels.

3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

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3.4 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
- Install with 1/4-inch open space where panels abut other construction or structural penetrations.
 - Fasten with corrosion-resistant screws.

— 3.5 APPLYING TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at locations indicated to receive tile. Install with 1/4inch gap where panels abut other construction or penetrations.
- B. Cementitious Backer Units: ANSI A108.11, at locations indicated to receive tile.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings and according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
- Cornerbead: Use at outside corners.
 - LC-Bead: Use at exposed panel edges.
 - L-Bead: Use where indicated.
 - D. Exterior Trim: Install in the following locations:
 - Cornerbead: Use at outside corners.
 - LC-Bead: Use at exposed panel edges.
- ### — 3.7 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

- 1 Level 1: Ceiling plenum areas, concealed areas, and where indicated.
- 2 Level 2: Panels that are substrate for tile.
- 3 Level 5: At all locations where exposed to view.

a. Primer and its application to surfaces are specified in other Division 09 Sections.

- E. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
- G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1 Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2 Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 132800 – ABATEMENT OF ASBESTOS CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general conditions, supplemental general conditions and division 1 general requirements, shall apply as fully as if included herein.

1.2 WORK INCLUDED

A. The work includes the furnishing of all labor, materials, equipment, insurance and services necessary for and reasonably incidental to the completion of asbestos removal and related work.

B. Comply with all governing regulations which the specifications supplement.

C. Comply with all Contract General Requirements.

1.3 REGULATIONS

A. All work shall conform to the requirements of the U. S. Environmental Protection Agency (EPA), U. S. Department of Labor - Occupational Safety and Health Administration (OSHA) and applicable State regulations relating to asbestos.

B. The EPA and OSHA regulations shall be posted at the job site for the duration of the work; posting shall be in a location clearly visible to employees and others in the area.

1.4 DEFINITIONS

A. Accredited/Accreditation: When referring to a person, Contractor or laboratory, means that such person is accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (AHERA Regulations).

B. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

C. Aggressive Sampling: High-activity level air sampling which results in all settled asbestos remaining airborne and uniformly disturbed through the use of special entrainment and mixing techniques. This makes any settled asbestos fibers accessible to the sampling filters for subsequent detection. The technique is described in 40 C.F.R. 763.90, Appendix A to Subpart E; and Guidance for Controlling ACM in Buildings, Appendix M.

D. Air Filtration Device (AFD): Air filtration device (AFD) is part of the pressure differential system in which the air is filtered. The AFD is to be equipped with HEPA filters.

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E. Air Monitoring: The process of measuring the fiber content of a specific volume of air. NIOSH Method 7400 or TEM Method in 40 C.F.R. 763, Subpart E, Appendix A, will be used for sampling and analysis.

F. Amended Water: Water to which a surfactant has been added.

G. Approve: Where used in conjunction with the QP's response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, "approved" will be held to limitations of QP's responsibilities and duties and does not release the Contractor from responsibilities to fulfill requirements of the Contract Documents. Approved shall also mean consent by U.S. EPA of training programs and the like.

H. Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (asbestos), anthophyllite, and actinolite-tremolite. Both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered to be asbestos.

I. Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

J. Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a Work Area for disposal.

K. Authorized Visitor: Personnel authorized by the Project Officer, testing lab personnel, or a representative of any Federal, State or local regulatory agency having authority over the project are considered authorized visitors.

L. Barrier: Any surface that seals off the Work Area to inhibit the movement of fibers.

M. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

N. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

O. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

P. Critical Barrier: Two layers of 6 mil polyethylene sheeting on wall or three layers on floor, spray foam, or duct tape used to completely seal off the Work Area to prevent spread of fibers to surrounding areas.

Q. Decontamination (Decon) Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower room and a clean room which is used for the decontamination of workers, materials and certain equipment contaminated with asbestos. This shall serve as the only entrance or exist to the Work Area.

R. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

S. Disposal Bag: A 6 mil thick, leak-proof polyethylene bag used for transporting asbestos waste from the work area to the disposal site. Each is labeled in compliance with OSHA 1926.1101 as follows:

DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND
LUNG DISEASE HAZARD and U.S. DOT ORM-E label for Asbestos-Hazardous Material
(including Asbestos Waste Manifest) and statements as required.

T. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent release of fibers.

U. Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

V. Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

W. Removal Encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in situ encapsulation.

X. Encapsulation: Treatment of ACM with an encapsulant.

Y. Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

Z. Filter: A media component used in respirators to remove solid or liquid particles from the respired air.

AA. Friable Asbestos Material: Material that contains more than 1.0% asbestos by Polarized Light Microscopy (PLM), and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. This includes previously non-friable material which becomes damaged to the extent that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

BB. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

CC. General Supervisor: Site Superintendent, Foreman: is the Contractor's representative at the work site. This person can be the Competent Person required by OSHA, 29 C.F.R. 1926.1101.

DD. Glovebag: A sack (typically constructed to 6 mil transparent polyethylene) with two inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.

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EE. HEPA Filter: A high efficiency particular air (HEPA) filter that removes from air 99.97% or more of monodispersed dioctylphthalate (DOP) or dioctylsebacate (DOS) particles having a mean particle diameter of 0.3 microns.

FF. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): HEPA filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97% efficiency for retaining fibers of 0.3 microns or larger.

GG. Indicated: The term "Indicated" is a cross-reference for Notes or Schedules on Drawings, to other paragraphs or Schedules in the Specifications, and to similar means of recording requirements in Contract Documents.

HH. Install: Unless defined in greater detail, "install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working on dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

II. Installer: The "installer" is defined as the entity (person or firm) engaged by the Contractor or Sub-Contractor to perform a particular trade at the work site, including installation, erection, application and similar required operations. Such entities (installers) shall be expert in operations they perform.

JJ. Landfill Receipt: Document signed by a landfill operator acknowledging the receipt of ACM waste.

KK. Manifest: A document detailing chain of custody for ACM waste hauled.

LL. Negative Pressure Glovebag: A glovebag which is composed of flexible plastic that can be subjected to negative pressure without collapsing.

MM. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

NN. Owner: Department of Behavioral Health and Developmental Services (DBHDS).

OO. Permissible Exposure Limit (PEL): The Contractor shall ensure that no employee is exposed to an airborne fiber concentration of asbestos in excess of the PEL expressed as an 8-hour TWA as determined by the OSHA Reference Method of 29 C.F.R. 1926.1101 (Current PEL for asbestos is 0.1 fiber/cc.).

PP. Personal Sampling Monitoring: Air samples taken in the breathing zone of workers as required by OSHA 29 C.F.R. 1926.1101.

QQ. Pressure Differential: Air pressure lower than surrounding areas, caused by exhausting air from a sealed space (Work Area).

RR. Pressure Differential System: A local exhaust system, utilizing HEPA filtration, capable of maintaining a pressure differential inside the Work Area and a constant airflow from adjacent areas into the Work Area and exhausting that filtered air outside the Work Area.

SS. Project Manager (Contractor): The asbestos Contractor's employee responsible for the total oversight of the project.

TT. Plasticize: Means to cover floors and walls with polyethylene sheeting as herein specified and in accordance with the temporary Enclosure Section.

UU. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

VV. Provide: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

WW. Qualified Person (QP): A Registered Architect, Professional Engineer, or Industrial Hygienist who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Management Planner, Project Monitor, and/or Asbestos Project Designer. The QP must be qualified to perform visual inspections as indicated in ASTM E 1368. The QP shall be appropriately licensed in the State of Virginia as a Project Monitor and Project Designer. For this project, Froehling & Robertson, Inc. personnel will serve as the QP.

XX. Regulated ACM: Means friable ACM, non-friable ACM that has become friable, non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading or non-friable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the ACM during renovation or demolition.

YY. Regulated Area: An area where asbestos removal operations are performed which is isolated by physical boundaries to prevent entry of unauthorized persons or the spread of asbestos dust, fibers or debris. Within this area, the airborne concentration of asbestos could reasonably be expected to exceed the PEL.

ZZ. Removal: The taking out or stripping of all ACM from a damaged area or associated area or space.

AAA. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

BBB. Short-Term Exposure Limit (STEL): A "ceiling" concentration, identified in OSHA regulations, of an airborne substance that shall not be exceeded for a duration of any 30-minute period (Current STEL for asbestos is 1.0 fiber/cc.).

CCC. Submittal: Items which are required to be presented to the Project Officer and/or the QP for review, consideration or decision.

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DDD. Surfacing Material: Material in a building that is sprayed-on, troweled-on or otherwise applied to surfaces or structural members for acoustical, fireproofing or other purposes.

EEE. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

FFF. Testing Laboratory: The "testing laboratory" is an independent entity to perform specific air sampling and analysis at the work site and associated areas, to report and (if required) interpret results. Analysis shall be performed by a laboratory accredited by the American Industrial Hygiene Association (AIHA) and having demonstrated a proficient rating in AIHA's Proficiency Analytical Testing (PAT) Program. The laboratory shall be licensed by the Virginia Department of Commerce as an Asbestos Analytical Laboratory. The laboratory shall also be accredited by the National Institute of Standards and Technology (NIST) through the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk sample analysis and air sample analysis by TEM (TEM Method of 40 C.F.R. 763, Subpart E, Appendix A).

GGG. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

HHH. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed water vapor.

III. Waste Shipment Record: Means the original shipping document, originated and signed by the waste generator (Abatement Contractor) used to track and substantiate the disposal of ACM waste as described in 40 C.F.R. Part 61.

JJJ. Waste Generator: Means the licensed Asbestos Abatement Contractor removing ACM waste from the property.

KKK. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-containing waste.

LLL. Work Area: The area where asbestos-related work or removal operations are performed; the Work Area is defined and/or isolated to prevent the spread of asbestos dust, fibers, or debris, and entry by unauthorized personnel. The Work Area is a Regulated Area as defined by 29 C.F.R. 1926.1101.

MMM. Work Site: The term "work site" is defined as the space available to the Contractor for performance of the work either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the Drawings, and may or may not be identical with the description of land upon which the project is to be built.

ABBREVIATIONS AND NAMES: The following acronyms or abbreviations referenced in Contract Documents are defined to mean the associated names. Both names and addresses are subject to change and are believed to be, but are not assured to be, accurate and up-to-date as of the date of the Contract Documents:

ACM Asbestos Containing Material AIA American Institute of Architects 1735 New York Avenue, N.W. Washington, D.C. 20006
(202) 626-7474

ANSI American National Standards Institute 1430 Broadway New York, NY 10018
(212) 354-3300

ASTM American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
(215) 299-5400

CFR Code of Federal Regulations Available from Government Printing Office Washington, D.C 20402 (Usually first published in Federal Register)

Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460
(202) 382-3949 f/cc fibers per cubic centimeter

MSHA Mine Safety and Health Administration

NIOSH National Institute for Occupational Safety and Health

NIST National Institute of Standards and Technology
(U.S. Department of Commerce) Gaithersburg, MD 20234
(301) 921-1000

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor) Government Printing Office Washington, D.C. 20402

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TEM Transmission Electron Microscopy VA DPOR Virginia Department of Professional and Occupational Regulation 3600 West Broad Street Richmond, Virginia 23230-4917 (804) 367-8500

UL Underwriters Laboratories 333 Pfinngsten Road Northbrook, IL 60062

1.5 INFORMATION TO BE SUBMITTED AFTER CONTRACT IS AWARDED

A. Immediately upon award of the Contract, and before any work is commenced, Contractor shall submit for approval by the Owner and their QP the information listed below, and shall be in quantity to allow the Owner to retain one copy and the QP to retain one copy. The data shall show compliance with the requirements of the Contract Documents and governing regulations.

1) Containment and shrouding procedures, including any unusual conditions. 2) Personal air sampling plan. 3) Name of laboratory to be used in air sample analysis and copy of American Industrial Hy

giene Association (AIHA) Accreditation. 4) Location of change and decontamination areas. 5) Location of landfill for disposal of asbestos waste which has been approved by EPA. 6) Manufacturer's technical data sheets on proposed surfactant, encapsulant, mastic removers,

etc. 7) Certificates of Insurance with notarized statement. 8) Copies of Asbestos Contractor, Worker's and Supervisor's Licenses. 9) Notifications to all appropriate state and federal agencies and local fire and police departments.

1.6 SCOPE OF WORK

A. The Scope of Work includes, but is not necessarily limited, to the following:

1) The Abatement Contractor shall be responsible for removal of all asbestos-containing materials impacted by this project. These materials include vinyl flooring and associated mastics and window and door caulking. In addition, several presumed asbestos containing materials were identified during the survey of the building, which may be encountered during renovation. They include:

Thermal systems insulation behind walls and above ceilings;
Electrical panel backing;
Exterior water proofing and membranes;
Fire doors.

Unit rates for abatement of these materials, if encountered, shall be provided as part of the contractor's base bid.

2) The Abatement Contractor has the responsibility for determining actual quantities of materials to be removed and reviewing the scope of work. No additional contract price adjustments will be allowed due to variances between actual quantities and the estimated quantities listed herein (unless otherwise specified in this document). The Contractor should allow under their base bid for the removal of all materials as described in the survey report and/or referenced in this specification.

3) All mobilizations and permit notifications shall be the Abatement Contractors responsibility.

4) This section includes all work necessary to reduce air concentrations of asbestos to the specified level and maintain the specified asbestos control limits during the life of the contract. It also contains removal, containment, and disposal procedures for asbestos-containing building materials (ACBMs).

5) All asbestos abatement work will be performed by competent, licensed (by the Virginia Department of Professional and Occupational Regulation) persons trained, qualified, and knowledgeable in the techniques of abatement, handling, and disposal of ACBMs and materials contaminated by asbestos, in accordance with pertinent local, state, and federal regulations.

6) The Abatement Contractor shall remove all gold and tan sheet vinyl and mastic (approximately 2,000 square feet) located within Building 9. The Abatement Contractor shall remove these materials within negative pressure containment with a minimum pressure differential of 0.02" water column. Note 1: The Abatement Contractor shall be responsible for removal of all vinyl flooring and/or mastic under partition walls, fixtures, cabinets, and other furnishings and obstructions.

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7) The Abatement Contractor shall remove all asbestos-containing window and door caulking. There are approximately sixty (60) windows and doors. The adhered caulking can be abated by removing the entire window and door casing intact and disposing of it as asbestos containing. Any residual caulking shall be removed from the openings manually using wet methods. During removal, drop-cloths shall be placed below the area of removal to collect any loose debris and the work area shall be wet wiped and HEPA vacuumed during cleanup.

8) As part of the base bid, the Abatement Contractor shall perform limited floor, wall and ceiling demolition throughout the proposed renovation area in coordination with general architectural, plumbing, electrical, mechanical work to adequately expose piping and/or any other materials that may contain asbestos for inspection. The QP (Froehling & Robertson) shall conduct asbestos testing of suspect materials and/or any other materials discovered during this renovation. The Contractor's scope of work shall be adjusted accordingly based on the results of testing if additional materials are uncovered.

Conduct all subsequent asbestos removal within negative pressure containment or negative pressure glove bags as warranted. Where ACM materials are damaged, the Contractor shall clean and decontaminate these areas. Where building materials (plaster, drywall, and acoustical tile) have been contaminated with asbestos, the Abatement Contractor shall be responsible for the removal and disposal of this material as asbestos-containing waste. Note: All debris generated from the demolition of the walls/ceilings and pipe chases shall be treated as asbestos contaminated materials and the areas shall be decontaminated as part of this work.

The Abatement Contractor shall submit unit rates for removal of the following items:

- a) Removal of flooring and mastic within negative pressure containment, per square foot.
- b) Removal of asbestos containing pipe insulation and mudded elbows/fittings (TSI) within negative pressure containment, per linear foot.
- c) Removal of asbestos containing pipe insulation and mudded elbows/fittings (TSI) utilizing glove bags, per linear foot.
- d) Removal of asbestos containing caulk per window and door.
- e) Removal of electrical panel backing per square foot.
- f) Removal of fire doors, per door.
- g) Removal of water proofing and membranes per square foot.

1.7 NOTES FOR DEMOLITION / RENOVATION

- A. The Abatement Contractor shall coordinate with the Mechanical, Electrical, Plumbing, and General Contractors to ensure that all appropriate systems that will be impacted by demolition have been properly decommissioned prior to the start of any work.
- B. The Abatement Contractor shall coordinate with the General Contractor selected for this project to verify that the structures will support the planned activities and comply with local building codes and OSHA requirements.

1.8 QUALITY CONTROLS

- A. The asbestos removal Contractor's Superintendent shall be on the job each day during removal and shall be knowledgeable, experienced and competent in this type of work.
- B. The asbestos removal Contractor shall be responsible for any damage to the building and its contents resulting from leakage or spillage of water.
- C. Authorities of the Commonwealth of Virginia shall be notified of the starting date of the asbestos removal project by the asbestos removal Contractor.
- D. The Owner reserves the right to halt the project work until hazardous or potentially hazardous conditions are corrected.
- E. The Owner reserves the right to independently perform such analysis and tests at any time as he deems necessary to ensure and protect safety of the project.

1.9 WORKER PROTECTION - ASBESTOS REMOVAL PROCEDURES & EQUIPMENT

- A. Comply with all EPA and OSHA Regulations, and follow EPA workplace guidelines.
- B. Provide and maintain negative air systems for all work areas, for the duration of asbestos removal work.
- C. Submit certificates signed by each employee indicating that the employee has received Virginia DPOR-approved training and is currently licensed in the Commonwealth of Virginia in the proper handling of materials that contain asbestos.
- D. All workers shall be instructed in and be knowledgeable of the following:
 - 1) The hazards of asbestos exposure.
 - 2) Use of respirators and protective clothing.
 - 3) Use of personal air monitoring equipment.
 - 4) Use of decontamination facilities and designated showers.

E. Respiratory Equipment and Air Sampling Requirements

- 1) Provide workers with respiratory equipment in accordance with OSHA 1910.134, as suitable for the asbestos exposure in the work area.
- 2) Provide sufficient filters for replacement of disposable type filters.

F. Provide a copy of written respirator program on the job site at all times.

G. Personnel breathing zone samples shall be made by the asbestos removal Contractor on a daily basis for determination of both 8-hour time weighted average (TWA) and ceiling concentrations of employee exposures.

H. The sampling schedule shall be posted outside of the containment area showing sample frequency, duration of the sample, and pump flow rates.

I. Results of all samples shall be posted within 24 hours of sampling outside of the containment area, and maintained there until the job has been concluded. This data shall include both the results of individual samples and the results of 8-hour TWA determinations. Posted results should include a synopsis of work activities of which the results are representative.

1.10 AIR MONITORING

A. Provide air monitoring in the work areas throughout all asbestos stripping, removal and cleaning operations to ensure that the workers are adequately protected at all times. All personal air monitoring for OSHA compliance shall be the responsibility of the Contractor.

B. Samples for air monitoring shall be collected by a competent person in accordance with methods prescribed in Chapter X of the Federal OSHA Industrial Hygiene Field Operations Manual or by equivalent procedures.

C. Air monitoring shall be in compliance with 1910.1001 (f) of the OSHA standards.

D. Air samples must be analyzed by NIOSH method 7400 by a laboratory accredited by AIHA.

E. Air monitoring (protection of the Contractor's employees) shall be provided throughout the removal and cleaning operations. Air monitoring shall be conducted and evaluated by a testing laboratory employed by the asbestos removal Contractor to ensure that the Contractor is complying with applicable EPA and OSHA regulations.

F. Environmental samples outside of containment and clearance sampling shall be performed by the QP (Froehling & Robertson, Inc.).

G. Area samples shall be collected outside the containment in areas of highest risk of contamination.

H. Samples shall be made on a daily basis outside the containment.

I. All analytical results shall be presented as signed "Certificates of Analysis". Form shall state:

Date and time sampling began. Flow rate of samples. Sampling time elapsed. Concentration of fibers. Site/individual sampled. Signature of Analyst.

J. Two copies of analytical results shall be delivered in writing to the job site within 24 hours of sample collection (excluding non-working days).

K. Sampling schedules for area samples shall be posted outside the containment area showing sampling frequency, sample duration, and pump flow rates.

L. Results of area samples made outside the containment shall be posted within 24 hours and maintained in the area showing the fiber concentrations. Posted results should include a synopsis of the days activities of which the samples are representative.

M. The Owner shall be informed immediately of any area samples outside the containment with results in excess of 0.1 fibers/cc.

N. Copies of the results of all samples made in areas where Owner's employees are or may be exposed shall be given to the Owner to assure maintenance of records in compliance with OSHA standard 1910.1001 (i) (1).

O. Operations shall be discontinued immediately at any time visible emissions are observed emanating from the containment.

PART 2 - PRODUCTS

2.1 PRODUCTS AND EQUIPMENT

A. Protective plastic (polyethylene) sheeting of minimum 6 mil thickness and size to provide protection to all equipment, floors, walls, piping, ductwork, and all other exposed areas, with minimum frequency of joints.

B. Seal tape shall be glass fiber or other type capable of sealing joints of adequate sheets of plastic for the attachment of plastic sheeting to finished or unfinished surfaces of dissimilar materials under either dry or wet conditions, including use of amended water.

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- C. Disposal Containers: Bags and drums to be used for disposal of asbestos waste shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an EPA approved and certified waste disposal site. Bags shall be 6 mil thickness.
- D. Warning Labels: As required by OSHA Regulation 29 CFR 1910.1001 (g) (2).
- E. Surfactant (wetting agent for amended water): Acceptable surfactant.
- F. Encapsulant: Acceptable encapsulant

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Isolate the work areas for the duration of the work by completely sealing off all openings and fixtures in the work area with plastic sheeting taped and glued securely. For roof removal, seal all roof penetrations.
- B. For full containment - Cover all critical barriers with two layers of 6 mil plastic sheeting. Cover wall and floor (where necessary) surfaces with one layer (overlapping at any seams) of 6 mil plastic sheeting. Seal poly with tape and glue securely. Floor coverings (if installed) shall extend up the wall 4 feet from the floor.
- C. Contractor shall provide the Outside Clean Room, Shower Room, and Equipment Room prior to start of work within building work areas. Personnel lockers in the Clean Room and facilities for disposal of contaminated clothing in the Equipment Room shall be provided. Egress openings shall consist of two sheets of plastic taped across the opening head and down opposite jambs, one leaf shall be taped on one side of the jamb, the other on the opposite jamb.
- D. Containment partitions separating a contaminated area from a clean area shall be constructed of wood studs and two sheets of minimum 6 mil polyethylene plastic. The inner plastic barrier shall face the contaminated area, the outer barrier, the clean area.
- E. Maintain enclosures in tidy conditions. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning and end of each work period. Use smoke methods to test effectiveness of barriers.
- F. Each unit of asbestos filtration systems shall consist of a blower filter system, equipped with HEPA inline filtration which, as a minimum, continuously traps asbestos fibers of all sizes to 0.3 microns at 99.97% efficiency. Each unit shall be equipped with the following minimum controls:

1) A warning light and audible alarm to indicate reduced air flow due to dirty filters.

2) Automatic shut down, with warning light, to ensure against continued operation of units in event of clogged or damaged filters.

G. The asbestos filtration system shall be in operation during all removal operations, until final clearance air samples are received. An adequate number of filtration units shall be used to assure maintenance of pressure differential of 0.02" water column. In addition, filtration units shall be sized to provide a minimum of four air changes per hour in the containment area. Provide instrumentation to document pressure differential.

H. Post the EPA and OSHA regulations or any applicable state and local government regulations at the job site in locations clearly visible to employees and others. Attention is directed to all requirements of the Contract Documents concerning precautionary procedures mandated thereby and by OSHA and EPA for the protection of personnel, the public, and the environment from exposure to or possible contamination by asbestos fibers.

I. In addition to requirements for asbestos protection, comply with all other applicable requirements of 29 CFR 1910 and 1926.

J. Provide hard hats, eye protection, and foot protection in those areas where such protective measures are required by OSHA regulations.

K. Workers shall always wear a respirator properly fitted on the face while in the work area. Instruct and train workers to use respirators properly in accordance with the requirements of the American National Standards Practices for Respiratory Protection (ANSI Z88.2-1969). Ensure that workers wear the appropriate respirator at all times while in the work area. Each employee shall be tested for respirator fit in accordance with the cited ANSI standard.

L. Workers shall wear disposable full body coveralls and disposable head and foot coverings in the work area. If non-disposable footwear such as protective shoes are required and disposal foot coverings are not suitable, the non-disposable protective footwear shall be left in the work area at all times until disposal at job completion, then disposed of as asbestos contaminated waste.

M. The Contractor shall establish decontamination procedures for each work area. All persons without exception shall pass through these decontamination areas for any purpose. Procedures shall, as a minimum, consist of the following:

1) Outside Clean room Area: In this room, the worker or individual shall remove normal street clothing and replace with clean work clothing, including disposable coveralls, respiratory protective equipment, and all other protective gear. No asbestos contaminated items shall enter this room with the exception of reusable respirators which are to be placed in a bin or other suitable receptacle approved by the Contractor's technical representative. Provide suitable lockers or other secure storage areas for the employee's clothing.

2) Showers: A shower room or similar facility shall be provided for transit by cleanly dressed workers entering the work area from the outside clean room, or by workers headed for the showers after undressing in the contaminated equipment room or area. Except in cases of

emergency, no person shall leave a contaminated area without first having taken a shower. Propose methods by which the personal hygiene of workers or other persons involved can be monitored. Water from the showers shall be passed through 5 micron water filters and then piped into the building floor drain or collected and disposed of by the Contractor. Provide water for the showers. Cold water supply from existing system may be tapped by use of garden hoses, clamps and control valves. The taps and extensions shall be provided by the Contractor. The change facility shall be equipped with adequate water heating capacity to provide for hot water showers. The decontamination facility shall be equipped with a thermostatically controlled heating system for the clean room and equipment room.

3) Equipment Room: Provide an area in which work equipment, footwear and contaminated work clothing can be placed in suitable receptacles for reuse or disposal prior to entry into the shower room and thence to the outside clean room.

4) Decontamination Procedures: Submit to the Owner, a protection program to ensure that workers and others follow an established decontamination sequence utilizing the aforementioned facilities. They shall ensure that gross contamination and debris is removed from protective clothing and equipment prior to egress from the work area. Respiratory protective equipment shall be removed last, during shower, to prevent inhalation of fibers during removal of contaminated clothing. The Contractor shall provide a plan for receipt, inspection, cleaning and storage of respiratory protective equipment in such a manner as to avoid contamination of clean areas.

3.2 METHOD OF REMOVAL FOR ENCLOSED WORK AREAS

A. A low pressure fine spray of amended water shall be applied to reduce fiber release preceding removal. The asbestos shall be saturated sufficiently to retard emission of airborne fibers. If the asbestos is thick and detaches in chunks having dry bottoms, amended water shall be sprayed over the material as it is loosened and removed.

B. Following removal of asbestos-containing material, all plastic sheeting, tape, cleaning material, clothing and all other disposal materials or items used in the work area shall be packed into sealable plastic bags (6 mil minimum), sealed and placed into a locked dumpster for transport. The containers or dumpster shall be labeled as prescribed by OSHA Specifications 29 CFR 1910.1001 (g).

C. All containers shall be cleaned and thoroughly decontaminated before leaving the work area by being passed through the shower, or through the airlock and container cleaning assembly, as follows:

1) Containers shall first be gross-cleaned by vacuuming and then damp-wiped, before being placed into shower container or cleaning airlock.

2) If a container being transferred from the work area via a shower has dried, it shall be wet-wiped again before being transferred past the shower.

D. Transport the sealed container or enclosed dumpster to an EPA approved and certified waste disposal site. The Contractor shall provide the Owner with a signed certificate listing the quantity of materials delivered to the disposal site, a description of the location of the site, and a statement attesting to the fact that the site is an EPA and State approved disposal location. The signatures of the asbestos removal Contractor, transporter, and site operator must appear on the certificate. The Contractor shall ensure that the operator leaves damaged bags in the delivery containers and that the entire contaminated container is buried, however, sealed plastic bags may be dumped from the containers into the burial site and uncontaminated containers may be reused. The Contractor shall certify that any reused containers have not contained damaged or broken bags of asbestos or other asbestos-contaminated material.

E. Disposal of all asbestos waste shall be at a prearranged disposal site in accordance with regulations of the Virginia Department of Environmental Quality-Waste Division and OSHA Regulation 29 C.F.R. 1910.1001.

3.3 METHOD OF REMOVAL FOR GLOVE BAGS

A. The glovebag method may be appropriate for removing certain sections of pipe insulation. Negative pressure enclosures are not required if glovebags are installed according to manufacturer's recommendations.

B. Remove wetted asbestos material within the sealed negative pressure glove bags in small sections. Glovebags are to be single use only.

C. Personal air monitoring of the glovebag worker shall be performed and air monitoring results shall not exceed 0.1 f/cc.

D. In areas where the pipe and insulation are to be removed, the glovebag method may be used to remove sections of pipe insulation to allow for cutting of the pipe. The remaining intact asbestos insulation may be wrapped in two layers of 6 mil polyethylene to allow for removal and disposal of pipe and insulation together.

E. The abatement contractor shall place a negative air unit adjacent to the work area.

3.4 DECONTAMINATION OF WORK AREA

A. Replace pre-filter and the intermediate filter in the Air Filtration Device. Clean all surfaces of the Work Area, including the outside surface of critical barrier sheeting, tools, scaffolding and/or staging, by HEPA-filtered vacuuming, then damp cleaning and mopping. Do not dry-dust or dry-sweep. Continue cleaning until there is no visible dust, debris or residue on polyethylene sheeting and other surfaces.

B. Perform a complete visual inspection of all Work Area surfaces and contents. If any debris or residue is found, repeat the first cleaning and continue decontamination procedure from that point.

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- C. Allow sufficient time for the Work Area to completely dry while operating HEPA filtered fan units. Maintain operation of negative pressure differential system in operation during the drying period.
- D. The QP shall conduct a visual inspection of the Work Area when the abatement and decontamination is complete and when the Contractor's supervisor requests such inspection.
- E. After the visual inspection, an approved lock down encapsulant shall be applied to all the surfaces in the Work Area. The encapsulant used shall not impede reinsulation. After sufficient drying time, determined by the QP, the final clearance can take place.
- F. Additional cleaning required after the first final cleaning will be performed at the expense of the contractor. Additional hours required by the QP will also be an expense paid for by the Contractor, as well as necessary repeat final air clearance analyses.
- G. After final air samples are found to meet clearance criteria, remove critical barriers and completely dismantle and remove Decontamination Area.
- H. Seal HEPA filtered AFDs with 6 mil polyethylene sheeting and duct tape to form a tight seal at intake and before unit is moved from the Work Area.

3.5 FINAL INSPECTION AND TESTING.

- A. After cleaning and decontamination of the workspace has been conducted, and if a high degree of cleanliness has been achieved, notify the QP that the workspace is ready for inspection and final testing. The QP will visually inspect each Work Area where such activity was conducted to determine whether the clean-up has been properly completed and to detect any visible asbestos dust or contamination. The QP shall conduct a visual inspection of the Work Area when the abatement and decontamination is complete and when the Contractor's supervisor requests such inspection. The visual inspection will be conducted in compliance with ASTM E 1368-90, Standard Practice for Visual Inspection of Asbestos Abatement Projects.
- B. If the visual inspection does not reveal any dust or other signs of contamination, the final air monitoring will take place. For glove bag removal and general cleaning only, a visual inspection along with area samples collected during the abatement procedures will serve as a clearance for the abated areas. Samples collected during abatement shall not exceed 0.1 f/cc.
- C. Final air clearance testing shall be conducted by the QP using aggressive air sampling techniques in the Work Area in accordance with EPA 40 C.F.R. Part 763.90(i), (2, i) and Appendix A.
- D. Phase contrast microscopy analysis will be performed in accordance with NIOSH Method 7400. Final test results shall show contamination levels not to exceed 0.01 f/cc when using phase contrast microscopy. Air samples shall have a minimum volume of 1,200 liters per sample but may vary depending on size of Work Area and other variables.

END OF SECTION 132800

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SECTION 132810 – BIRD DROPPING (GUANO) REMEDIATION PROCEDURES

PART 1 – GENERAL INFORMATION

1.1 RELATED DOCUMENTS

A. Documents referred to the DBHDS Documents, which include the Solicitation Documents, Contract Sections, Contract Clauses, Special Contract Requirements and Standard Contract Provisions for Use With Specifications for DBHDS Construction Projects are part hereof the same as if repeated herein.

1.2 NOTES

A. The Contractor shall coordinate with the Mechanical, Electrical, Plumbing, and General Contractors to ensure that all appropriate systems that will be impacted by remediation have been properly decommissioned prior to the start of any work.

B. The Contractor shall coordinate with the General Contractor selected for this project to verify that the structure will support the planned activities and comply with local building codes and OSHA requirements.

C. The Contractor shall be responsible for providing all necessary walkways, power, water, incidental supplies and lighting to complete the Scope of Work.

1.3 PROJECT DESCRIPTION

The intent of this plan is to provide the Contractor with general guidance for abating small areas of sporadic bird droppings (guano) that may be encountered during renovation activities in the attic of Building 9 prior to the gutting of the space. It has been prepared at the request of and is based on information relayed by the DBHDS site representative. The attic is unfinished and there are walkways of loose plywood and boards. There are six (6) louvered vents around the perimeter where birds may have entered around dislodge blocking boards. There is blown in insulation exposed around the perimeter walls, below the louvers, in the areas of potential impact. Beneath the insulation, the floor consists of the back of plaster and lath of the ceiling deck of the floor below. The presence of bird dropping contamination is assumed and is reported to be localized in the immediate vicinity of the louvered vents. However, the exact locations and areas of impact were not confirmed; it is the Contractor's responsibility to confirm the exact areas and quantity of impacted materials in concert with the Owners representative. For the purpose of bidding, the Contractor shall assume that six (6) areas of minor (sporadic droppings and no buildup of feces), localized contamination that total less than 100 ft² will be addressed during this remediation. If subsequent investigation of the attic reveals that the extent of contamination is greater than 100 ft² of there are accumulations of built-up feces, the scope of work and bid will be adjusted based on the actual extent of the remediation, as verified by a DBHDS representative. Verification of the extent of impact will be performed with a DBHDS representative once the attic space can be safely accessed, after the Contractor has control of the site.

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1.4 WORK INCLUDED

- A. The work includes the furnishing of all labor, materials, equipment, insurance and services necessary for bird dropping (guano) remediation in the attic and all required associated work, as addressed in the contract documents.
- B. Comply with all governing regulations, which the Plan supplement.
- C. Comply with all other related project specifications.
- D. The Contractor will be responsible for obtaining any local, state, and federal permits, as appropriate for this project, prior to starting work. All permits, notifications, patent restrictions or requirements, whether specified in this Plan or not, are the sole responsibility of the Contractor performing the work described herein. **Note:** If during the course of the contract, the Contractor is found to be not in compliance with the project specifications, the DBHDS will stop all work until any deficiencies in his performance of this work are corrected.

1.5 REGULATIONS and STANDARDS

- A. All work shall conform to the requirements of the U. S. Environmental Protection Agency (EPA), U. S. Department of Labor - Occupational Safety and Health Administration (OSHA) and applicable State regulations relating to bird dropping remediation.
- B. All work shall be conducted in general accordance with the following publication:

Macher, Janet, ed. Bioaerosols: Assessment and Control. Cincinnati: ACGIH, 1999.
- C. The EPA and OSHA regulations shall be posted at the job site for the duration of the work; posting shall be in a location clearly visible to employees and others in the area.

1.6 DEFINITIONS

- A. Aerosol: A system consisting of particles, solid or liquid, suspended in air.
- B. Air Filtration Device (AFD): Air filtration device (AFD) is part of the pressure differential system in which the air is filtered. The AFD is to be equipped with HEPA filters.
- C. Approve: Where used in conjunction with the DBHDS or their Representative, response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, "approved" will be held to limitations of the DBHDS or their Representative responsibilities and duties and does not release the Contractor from responsibilities to fulfill requirements of the Contract Documents.

D. Authorized Visitor: Personnel authorized by the Project Officer, testing lab personnel, or a representative of any Federal, State or local regulatory agency having authority over the project are considered authorized visitors.

E. Barrier: Any surface that seals off the Work Area to inhibit the movement of contaminants.

F. Certified Industrial Hygienist (CIH): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene. 3 DBHDS Bird Droppings (Guano) Remediation Guidance

G. Critical Barrier: Two layers of 6 mil polyethylene sheeting on wall or three layers on floor, spray foam, or duct tape used to completely seal off the Work Area to prevent spread of contaminants to surrounding areas.

H. Certified Safety Professional (CSP): A safety professional certified by the Board of Certified Safety Professionals.

I. Decontamination (Decon) Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower room and a clean room which is used for the decontamination of workers, materials and certain equipment contaminated with bird droppings. This shall serve as the only entrance or exist to the Work Area.

J. Disposal Bag: A 6-mil thick, leak-proof polyethylene bag used for transporting bird dropping waste from the work area to the disposal site.

K. DBHDS: The Department of Behavioral Health and Developmental Services (DBHDS) or their approved representative.

L. Encapsulant: A material that surrounds or embeds bird dropping (guano) debris in an adhesive matrix to prevent release of dust.

M. Encapsulation: Treatment of bird dropping debris with an encapsulant.

N. Filter: A media component used in respirators to remove solid or liquid particles from the respired air.

O. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

P. General Supervisor, Site Superintendent, Foreman: is the Contractor's representative at the work site.

Q. HEPA Filter: A high efficiency particular air (HEPA) filter that removes from air all particles with a mean diameter of 0.3 microns at a 99.97% or more efficiency.

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R. HEPA Vacuum (or vacuum cleaner): HEPA filtered vacuum collection equipment with a filter system capable of collecting and retaining particles with a mean diameter of 0.3 microns at a 99.97% or more efficiency.

S. Indicated: The term "Indicated" is a cross-reference for Notes or Schedules on Drawings, to other paragraphs or Schedules in the Specifications, and to similar means of recording requirements in Contract Documents.

T. Install: Unless defined in greater detail, "install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

U. Landfill Receipt: Document signed by a landfill operator acknowledging the receipt of bird dropping waste.

V. Manifest: A document detailing chain of custody for bird dropping waste hauled.

W. Negative Pressure Enclosure: Pressure differential of a minimum of -0.03 column inches of water as related to outside pressure. Utilization of a manometer shall be use as evidence.

X. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Y. Pressure Differential: Air pressure lower than surrounding areas, caused by exhausting air from a sealed space (Work Area).

Z. Pressure Differential System: A local exhaust system, utilizing HEPA filtration, capable of maintaining a pressure differential inside the Work Area and a constant airflow from adjacent areas into the Work Area and exhausting that filtered air outside the Work Area.

AA. Project Manager (Contractor): The Contractor's employee responsible for the total oversight of the project.

BB. Project Officer: The DMHMRSAS employee responsible for overall contract administration.

CC. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

DD. Provide: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

EE. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

FF. Submittal: Items that is required to be presented to the Project Officer for review, consideration or decision.

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GG. Waste Generator: The Contractor performing the remediation work.

HH. Waste Shipment Record: Means the original shipping document, originated and signed by the waste generator (Contractor) used to track and substantiate the disposal of bird dropping waste.

II. Work Area: An area where bird dropping remediation operations are performed which is isolated by physical boundaries to prevent entry of unauthorized persons or the spread of bird droppings and associated dust.

1.7 INFORMATION TO BE SUBMITTED AFTER CONTRACT IS AWARDED

A. Immediately upon award of the Contract, and before any work is commenced, Contractor shall submit for information of the DBHDS the data listed below. The data shall show compliance with the requirements of the Contract Documents and governing regulations.

1. Method and means of removal and decontamination of bird droppings.
2. Containment and shrouding procedures, including any unusual conditions.
3. Location of change and decontamination area.
4. Location of landfill for disposal of bird dropping waste.
5. Manufacturer's technical data sheets on proposed encapsulant and anti-microbial agent.
6. Certificate of Insurance.
7. Copies of workers' Respirator Physicals.
8. Notifications to all appropriate state and federal agencies and local fire and police departments.

1.8 SCOPE OF WORK

A. The Scope of Work includes, but is not necessarily limited, to the following:

1. The Contractor shall be responsible for removing all bird droppings and contaminated materials within the attic and cleaning/decontaminating all surfaces within the areas of impact.
2. All debris within the attic in the immediate area of impact, including any insulation present shall be disposed of as bird dropping waste.
3. The areas of impact will have to be decontaminated prior to the removal of other building components in the attic such as the HVAC ducting.
4. Contractor shall put barriers in place to keep birds from returning.

**CENTRAL VIRGINIA TRAINING CENTER (CVTC) BUILDING #9 -RENOVATIONS STATE PROJECT CODE:
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1. The work will not be considered to be complete until the area is deemed visually clean by the DBHDS and/or their designated representative and passes any other clearance criteria deemed appropriate by the DBHDS which may include but will not necessarily be limited to bacterial and fungal sampling.
2. All mobilizations and permit notifications shall be the Contractor's responsibility.
3. All remediation work will be performed by a competent, State of Virginia licensed Contractor and persons trained, qualified, and knowledgeable in the techniques of remediation, handling, and disposal of bird droppings and materials contaminated by bird droppings, in accordance with pertinent local, state, and federal regulations. At a minimum Contractor shall have all personnel in a respiratory protection program and qualified to wear a respirator; a minimum of 16 hours of documented training by a CIH or comparable/qualified trainer (i.e. such as a CSP or OSHA qualified instructor) for workers on bioremediation projects and a minimum of 40 hours of similar type training for a supervisor. Note: The supervisor for this project will be required to be on-site at all times when remediation work is occurring.

1.9 QUALITY CONTROLS

- A. The Contractor's superintendent shall be on the job each day during removal and he shall be knowledgeable, experienced and competent in this type of work.
- B. The DBHDS reserves the right to halt the project work until hazardous or potentially hazardous conditions are corrected.
- C. The DBHDS reserves the right to independently perform such analysis and tests at any time, as deemed necessary to ensure and protect the safety of the project.

1.10 WORKER PROTECTION – BIRD DROPPING REMEDIATION PROCEDURES & EQUIPMENT

- A. Comply with all EPA and OSHA Regulations, and follow EPA workplace guidelines.
- B. Provide and maintain localized negative air filtration immediately adjacent to all work areas.
- C. All workers shall be instructed in and be knowledgeable of the following:
 1. The hazards of bird dropping exposure.
 2. Use of respirators and protective clothing.
 3. Use of decontamination facilities and designated showers.

BIRD DROPPING (GUANO) REMEDIATION PROCEDURES 132810 - 6

D. Respiratory Equipment

1. Provide workers with respiratory equipment in accordance with OSHA 1910.134, as suitable for the exposure in the work area.
 2. Provide sufficient filters for replacement of disposable type filters.
- E. Provide a copy of written respirator program on the job site at all times.

PART 2 - PRODUCTS

2.1 PRODUCTS AND EQUIPMENT

- A. Protective plastic (polyethylene) sheeting of minimum 6-mil thickness and size to provide protection to all equipment, floors, walls, piping, ductwork, and all other exposed areas, with minimum frequency of joints.
- B. Seal tape shall be glass fiber or other type capable of sealing joints of adequate sheets of plastic for the attachment of plastic sheeting to finished or unfinished surfaces of dissimilar materials under either dry or wet conditions.
- C. Disposal Containers: Bags and drums to be used for disposal of waste shall be suitable to receive and retain any bird droppings or contaminated materials until disposal at an approved waste disposal site. Bags shall be of 6 mil thickness.
- D. Anti-microbial agent: Acceptable anti-microbial agent.
- E. Encapsulant: Acceptable encapsulant.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Isolate the immediate work areas for the duration of the work by completely sealing off all openings and fixtures including HVAC systems in the work area with plastic sheeting taped and glued securely.
- B. Cover adjacent surfaces with plastic sheeting sealed with tape and glue securely, as required.
- C. Contractor shall provide a decontamination area for workers consisting of a minimum of a wash basin with running water.
- D. Each unit of the filtration systems shall consist of a blower filter system, equipped with HEPA inline filtration that, as a minimum, continuously traps particles of all sizes to 0.3 microns at 99.97% efficiency. Each unit shall be equipped with the following minimum controls:

BIRD DROPPING (GUANO) REMEDIATION PROCEDURES 132810 - 7

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**CENTRAL VIRGINIA TRAINING CENTER (CVTC) BUILDING #9 -RENOVATIONS STATE PROJECT CODE:
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1. A warning light and audible alarm to indicate reduced air flow due to dirty filters.
2. Automatic shut down, with warning light, to ensure against continued operation of units in event of clogged or damaged filters.

E. The filtration system shall be in operation during all remediation operations, until final clearance air samples are received. Localized negative pressure filtration will be provided adjacent to each work area by the use of a cowl and flex duct on the intake side of the unit.

F. Post the EPA and OSHA regulations or any applicable state and local government regulations at the job site in locations clearly visible to employees and others. Attention is directed to all requirements of the Contract Documents concerning precautionary procedures mandated thereby and by OSHA and EPA for the protection of personnel, the public, and the environment from exposure to or possible contamination by bird droppings.

G. Provide hard hats, eye protection, and foot protection in those areas where such protective measures are required by OSHA regulations.

H. Workers shall always wear a respirator properly fitted on the face while in the work area. Instruct and train workers to use respirators properly in accordance with the requirements of the American National Standards Practices for Respiratory Protection (ANSI Z88.2-1969). Ensure that workers wear the appropriate respirator at all times while in the work area. Each employee shall be tested for respirator fit in accordance with the cited ANSI standard.

I. Workers shall wear disposable full body coveralls and disposable head and foot coverings in the work area. If non-disposable footwear such as protective shoes are required and disposable foot coverings are not suitable, the non-disposable protective footwear shall be left in the work area at all times until disposal at job completion, then disposed of as contaminated waste.

J. The Contractor shall establish decontamination procedures for each work area. All persons without exception shall pass through these decontamination areas for any purpose. Procedures shall. Due to the assumed minimal amount of contamination, double-suit decontamination procedures can be used.

3.2 WASTE DISPOSAL

A. All bird droppings, contaminated material (all debris within the work area including installed and loose insulation), plastic sheeting, tape, cleaning material, clothing and all other disposal materials or items used in the work area shall be double-bagged into sealable plastic bags (6 mil minimum), sealed and placed into metal or fiber containers or skips for transport.

B. All containers shall be cleaned and thoroughly decontaminated before leaving the work area by being passed through the shower, or through the airlock and container cleaning assembly, as follows:

1. Containers shall first be gross-cleaned by vacuuming and then damp-wiped, before being placed into shower container or cleaning airlock.

2. If a container being transferred from the work area via a shower has dried, it shall be wet-wiped again before being transferred past the shower.

C. Disposal of waste shall be at a prearranged disposal site that has been notified of the waste contents.

3.3 DECONTAMINATION OF WORK AREA

A. Remove all contaminated insulation or other materials by bagging them, then perform HEPA-filtered vacuuming and damp cleaning and wet wiping of all surfaces. Continue cleaning until there is no visible dust, debris or residue on surfaces.

B. Perform a complete visual inspection of all Work Area surfaces and contents. If any debris or residue is found, repeat the first cleaning and continue decontamination procedure from that point.

C. The DBHDS or their representative shall conduct a visual inspection of the Work Area when the decontamination is complete and when the Contractor's supervisor requests such inspection.

D. After the visual inspection, an approved anti-microbial agent and lock down encapsulant shall be applied to all the surfaces in the Work Area. After sufficient drying time, determined by the DBHDS, the final clearance, as determined appropriate by the DBHDS can take place.

E. Additional cleaning required after the first final cleaning will be performed at the expense of the contractor. Additional hours required by the DBHDS will also be an expense paid for by the Contractor, as well as necessary repeat final clearance analyses.

F. After final clearance analyses are found to meet clearance criteria, remove critical barriers and completely dismantle and remove Decontamination Area.

G. Seal HEPA filtered AFDs with 6-mil polyethylene sheeting and duct tape to form a tight seal at intake and before unit is moved from the Work Area.

3.4 FINAL INSPECTION AND TESTING.

A. After cleaning and decontamination of the workspace has been conducted, and if a high degree of cleanliness has been achieved, notify the DBHDS that the workspace is ready for inspection and final testing. The DBHDS will visually inspect each Work Area where such activity was conducted to determine whether the clean up has been properly completed and to detect any visible bird droppings or contamination. The DBHDS shall conduct a visual inspection of the Work Area when the decontamination is complete and when the Contractor's supervisor requests such inspection.

B. If the visual inspection does not reveal any dust or other signs of contamination, the final clearance sampling and analyses will take place at the discretion of the DBHDS.

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C. If the final clearance analyses are deemed unacceptable as determined by the DBHDS, the Contractor will be responsible for re-cleaning of the sampled area(s) at no additional cost or schedule impact to DBHDS. Additional testing will be performed following the re-cleaning to document that acceptable levels have been achieved. The Contractor will be responsible for fees and expenses related to retesting the area after re-cleaning.

END OF SECTION 132810

PRE-BID CONFERENCE

MEETING NOTES

ADDENDUM #01 -MARCH 12, 2012



CENTRAL VIRGINIA TRAINING CENTER

BUILDING #9 – RENOVATIONS DEPT OF BEHAVIORAL HEALTH & DEVELOPMENTAL SERVICE

(IFB No. 12-03 / State Project Code: 720-17457-004 / RRMM # 06153-01)

PRE-BID CONFERENCE -DATE: Wednesday, March 7th,
2012 at 2:00pm

PRE-BID CONFERENCE -LOCATION:
CENTRAL VIRGINIA TRAINING CENTER

521 Colony Road – Madison Heights, Virginia Building

#51 – Physical Plant Building

I. INTRODUCTIONS

A. OWNER -REPRESENTATIVES:

- . DBHDS -A&E Services..... Ron Davia, Project Manager
- . DBHDS -A&E Services..... Kevin O'Malley, Project Inspector
- . DBHDS -CVTC Campus..... Dr. Dale Woods, Facility Director
- . DBHDS -CVTC Campus..... Ronnie Woodall, Facilities Support - Operations Director



B. AE DESIGN TEAM -REPRESENTATIVES:

- Architect – RRMM Architects..... Mathew H Astrin, Principal / Sr. Project Manager
- Civil - Timmons Group..... Scott Brown - PE / Kirk Hawley, PE
- Structural – Stroud Pence..... Chris Geiman, PE
- MEP Engineers - PACE..... Bill Quinn, PE / James Barkley, PE

II. OVERVIEW OF PROJECT / DOCUMENTS

A. Summary of Work

1. Project Description:

The project scope is generally comprised of a complete interior renovation of an existing building totaling approximately 15,400 square feet of main floor area, with an existing basement level of about 2,900 sf. The exterior for Building #9 is existing to remain for the most part. The summary of work includes proposed building improvements to meet applicable building & life safety codes and current resident programming and operational needs. The general scope of work items for Building #9, include (but are not limited to) the following:

- Replacement of Windows & Door Systems.
- New Brick Infill of Existing Openings at Various Locations
- New 14' x 10' Free-Standing Utility Building
- New Building "Infill" Expansion at Kitchen Area
- Interior Renovations to Support Resident Program Needs
- Replacement of Plumbing, Mechanical and Electrical Systems
- New Fire Sprinkler & Fire alarm Systems
- Ancillary Site Improvements associated with the above reference items.

B. Schedule of Allowances: Refer to Project Manual (Bid Form)

C. Schedule of Unit Prices: Refer to Project Manual (Bid Form)

D. Contract Drawings: One (1) Volume, dated February 14, 2012

E. Contract Technical Specifications: Two (2) Volumes, dated February 14, 2012

III. BIDDING PROCEDURES:

A. Bidding Information:

- 1 Notice of Invitation for Bidders..... IFB No: 12-03 (DGS-30-256)
- 2 Instructions to Bidders..... CO-7a (DGS-30-055)
- 3 Standard Bid Bond Form..... CO-10.2 (DGS-30-090)
- 4 PreBid Question Form..... Bid Form (DGS-30-220)
- 5 Refer to Technical Specifications for additional require forms and procedures

B. Bid Form:

- 1 Bidders must use the Bid Form provided in the specification (project manual), or the latest revised copy of the form if provided in an addendum.
- 2 Bid Form shall be filled out in it's entirety, signed and dated. Any Bid Form received that is not completed in it's entirety, will be deemed as incomplete, and the Bidder will be considered as Non-Responsive.
- 3 Modifications to the contract price written on the outside of the bid envelope must be made and signed by authorized representative of the Bidder (Contractor), as identified on the bid form itself. Modification to the contract price must be clear and concise.
- 4 The time for Substantial Completion shall be 350 consecutive calendars days from the date of

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commencement of the work as specified in the Notice to Proceed as stated on the Bid Form.

5. Final Completion shall be within 30 days after the established date of Substantial Completion.

C. Bid Bond: Each bidder must include with its proposal a five percent (5%) bid security in the form of a certified check or Bid Bond written in the format included in the Bid Documents by a surety company licensed by the Commonwealth of Virginia Separate Performance and Material Bonds, each in the amount of one hundred percent (100%) of the Contract Sum, will be required to be furnished upon execution of the Contract.

D. Bidding Procedures -Milestone Dates:

1. Adverstisement for Bids:

⑩ **Wednesday - February 22, 2012**

2. Pre-Bid Conference (Non Mandatory):

⑩ **Wednesday - March 7, 2012 at 2:00pm EST**

⑩ CVTC – Building #51 (Physical Plant Building – Plan Room)

3. Bid Proposal - Submittal Deadline :

⑩ **Wednesday - March 21, 2012 at 2:00pm EST (sharp – as determined by Bid Officer)**

⑩ Office of A&E, Department of Developmental Services (DBHDS) Jefferson

Building – 1220 Bank Street – 7th Floor (Room 731) Richmond, Virginia
23219

4. Bid Proposal – Public Opening (Read Aloud) :

⑩ **Thursday - March 22, 2012 at 2:00pm EST (sharp – as determined by Bid Officer)**

⑩ Office of A&E, Department of Developmental Services (DBHDS) Jefferson

Building – 1220 Bank Street – 7th Floor (Room 731) Richmond, Virginia
23219

E. Questions Prior to Receipt of Bids:

1 Bidders shall promptly notify the Architect, in writing, of any ambiguity, inconsistency or error, which they may discover upon examination of the Bidding Documents or of the site and local conditions. Bidders are to submit the “Pre-Bid Question Form” included in the specifications.

2 All necessary responses to questions regarding Bid Documents prior to receipt of bids will be in writing by Addendum and sent to all document holders.

3 No oral explanation in regard to the meaning of drawings and specifications will be made. Responses not in writing and not included in Addendum shall not be binding.

4 Submit questions in writing by mail, facsimile (757.622.2430) or email (mastrin@rrmm.com), to the attention of Mathew H Astrin, Principal at RRMM Architects, PC (**USE “PRE-BID” FORM**)

5 Bidders are responsible to call RRMM Architects, to confirm that all submitted questions have been received, including the completeness of the information that was transmitted.

6 Pre-Bid Questions submitted by Bidders must be “received” by RRMM Architects, no less than six (6) calendar days prior to the established Bid Proposal submittal due date.

7 Any Pre-Bid Questions received by RRMM Architects “less” than six (6) calendar days prior to the established Bid Proposal submittal due date will not be accepted.

F. Addenda:

1 Response to pre-bid questions will be in the form of Addendum and issued to all plan holders.

2 Last Addendum offering clarification to the Bid Documents (and Pre-Bid Questions received within the allowable time parameters indicated above) will be issued no less than three (3) calendar days prior to the established Bid Proposal submittal due date.

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3. Note: Owner still reserves the right to issue an Addendum less than three (3) calendar days prior to the established Bid Proposal submittal due date for the purposes of extending the Bid Due Date or cancelling the IFB due to unanticipated / unique circumstances.

G. Project Schedule:

- ☐ Project Substantial Completion..... 350 Calendar Days from Date of NTP ☐ Project Final Completion..... 30 Calendar Days from Date of Sub Completion

H. Post-Bid Procedures:

- 1 Owner & Architect will review all received bid proposal packages for accuracy and completeness of all documentation provided, to determine the appearant order of responsive bidders, from lowest to highest.
- 2 Owner & Architect will assess bid proposal amounts determine if the bid proposal amount(s) are within the established available funding and compliance of bidders' proposal packages. The Owner / Architect may contact the lowest appearant bidder(s) to request for additional information that may be needed in order to confirm the if the bidder(s) qualifications and accuracy of documentation support a determination for meeting the criteria as a responsible bidder.
- 3 Architect will submit final letter of findings and recommendations to the Owner for final review and consideration.
- 4 The Owner will notify the appearant lowest qualified bidder of Intent to Award, followed by NTP

J. Contract Award

- 1 The successful bidder will be required to submit a Performance Bond and Standard Labor & Material Payment Bond in accordance with CO-7A, Section 13 "Contract Security", regardless of contract amount.
- 2 The successful bidder is to provide "all risk" builders risk insurance for the work in an amount equal to one hundred percent (100%) of the Contract Price for the Work.
- 3 The successful bidder must provide information to the Owner about how much work on the contract is being performed by Small, Women-Owned, and Minority-Owned businesses.
- 4 The successful bidder must use the most current DGS forms. Forms may be viewed or downloaded at the DGS Forms Center, <http://forms.dgs.virginia.gov>.

K. General Project Review

1. Construction Documents:

Bidders shall carefully review all of the technical sections of the project manual in addition to the project drawings, in addition to performing a site visit to field verify existing conditions to ensure a complete understanding of the project scope and requirements.

2. Project Description:

The project scope is generally comprised of a complete interior renovation of an existing building totaling approximately 15,400 square feet. The exterior for Building #9 is existing to remain for the most part. The summary or work includes proposed building improvements to meet applicable building & life safety codes and current resident programming and operational needs.

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3. Work Hours:

- Monday through Friday, 7:00 AM through 6:00 PM.
- Work outside these hours may be permitted at the request of the contractor to the Project Inspector. Work during state holidays must be coordinated in advance with the Project Inspector.

4. Temporary Construction Facilities:

- Contractor shall provide any temporary construction office space and telephone, material and equipment storage facilities, and any temporary utility connections as he deems necessary for his operations.
- Contractor may place a dumpster in the vicinity of the building and shall coordinate location with Project Inspector during construction.
- Contractor may use Owner's water and electricity. However, any damage to the existing water and electrical equipment / systems during the course of construction that is associated with the work under this contract, will be the Contractor's responsibility to repair and/or replace to as required to restore back to a fully operational system, at no cost to the Owner.
- Contractor to provide portable toilet and hand washing facilities. Toilet accommodations, properly secluded from observation, shall be erected and maintained in conformity with prevailing ordinances and sanitary regulations.

5. Security Issues:

- Each contractor employee will need a 15-20 minute orientation (one time), arranged prior to start of work by Project Inspector.
- Contractor, sub-contractors and other related suppliers and vendors are required to carry company identification at all times when on CVTC Campus.
- Contractor is responsible for maintaining a daily log report, to ensure that all staff, subcontractors and other related suppliers and vendors sign-in & sign-out when arriving & leaving the facility.
- Contractor personnel shall not leave vehicles with keys in them or with motors running.
- The Contractor is cautioned that the facility patients/residents are under State custodial care; therefore, access & control of areas of work shall be carefully restricted to provide protection for the facility residents and staff, and the Contractor's workers, equip, and materials.
- All construction equipment, supplies, tools, and material shall be stored in a secure area to prevent contact with facility staff or residents. Do not leave items in a location where they may cause a hazard to facility staff or residents.

6. Other Conditions:

- All DBHDS facilities are tobacco-free campus. Use or display of tobacco products is strictly prohibited campus-wide.
- Access to the site and other buildings outside the construction area will remain occupied by facility staff and patients / residents during the entire construction period.
- DBHDS requires a special SWAM (small, women, and minority) contract form to be included with each pay request. Form will be provided by DBHDS to selected contractor.
- Agency will have Project Inspector present for the project.

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IV. PROJECT CONDITIONS

A. Site Visits:

Arrange through Central Virginia Training Center.

B. Job Site Safety:

Contractor shall meet all local, state, and federal safety regulations. Construction means and methods shall remain the responsibility of the Contractor, as design professionals and Owner's inspectors are neither considered nor licensed as general contractors in the eyes of the law.

C. Other Considerations:

- ☐ Site access, traffic control and staging area
- ☐ Existing underground and overhead utilities
- ☐ Cleanup and housekeeping
- ☐ Completed "as-built" survey
- ☐ Coordination with follow-on Contractors, CVTC Staff and Owner's suppliers
 - o Technology wiring, FF&E. etc...

V. OTHER TOPICS DISCUSSED

A. PROJECT REQUIREMENT - LEED CERTIFICATION:

- ☐ Per current State / BCOM requirements, this project will be require LEED Certification to obtained from the United States Green Building Council (USGBC).
- ☐ Contractor is required to engage an experienced LEED-Accredited Professional (LEED-AP) to coordinate & manage all LEED related construction activites & documentation to ensure compliance with all established LEED credits criteria & requirements. LEED AP may also serve as waste management coordinator.
- ☐ LEED AP representative will be required to attend monthly progress meetings.
- ☐ The Contractor will be responsible for providing all required construction waste equipment on site to ensure the proper management and record keeping of various waste materials and disposal to qualified waste management facilities are in compliance with LEED Certification requirements.
- ☐ Coordinate with the Owner to establish acceptable staging areasfor the required waste management containers.
- ☐ It is highly recommended that all Bidders strongly consider the level familiarity & experience each sub-contractor, supplier and vendor has with the LEED process.
- ☐ The specifications further outlines the specific requiements associated with obtaining LEED Certification.

B. ALL BIDDERS MUST SUBMIT WORKING PAPERS PRIOR "OPENING" OF BIDS.

C. A TOUR OF BUILDNIG #8 AND BUILDING #9 WERE PROVIDED AFTER THE PRE-BID PROPOSAL MEETING. BIDDERS MAY REQUEST ADDITIONAL SITE TOURS BY CONTACTING KEVIN O'MALLEY (DBHDS - PROJECT INSPECTOR)

VI. ATTACHMENTS

A. PRE-BID CONFERENCE "SIGN-IN" SHEET

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PRE-BID CONFERENCE SIGN-IN SHEET

**DEPT. OF BEHAVIORAL HEALTH & DEVELOPMENTAL SERVICES MARCH 7TH,
2012**

CENTRAL VIRGINIA TRAINING CENTER RRMM

PROJECT No.: 06153-01

**BUILDING # 9 – RENOVATIONS IFB No. 12-03 STATE PROJECT No.:
720-17457-004**

ADDENDUM #01 -03/12/12

Dept of Behavioral Health & Developmental Services	DATE ISSUED	March 12th, 2012
	PROJECT #	IFB #: 12-03 State PC: 720-174-004
Central Virginia Training Center		
	# ATTACHMENTS	YES
TRASCO All Bidders Assigned Plans Rooms Owner		

CO Form #

BIDDING INFORMATION

NOTICE OF INVITATION FOR BIDS

INSTRUCTIONS TO BIDDERS

CO-7A

STANDARD BID BOND FORM

CO-10.2

PREBID QUESTION FORM

BID FORM

- 010200 GENERAL SITEWORK REQUIREMENTS
- 011000 SUMMARY
- 012600 CONTRACT MODIFICATION PROCEDURES
- 012900 PAYMENT PROCEDURES
- 013100 PROJECT MANAGEMENT AND COORDINATION
- 013200 CONSTRUCTION PROGRESS DOCUMENTATION
- 013300 SUBMITTALS PROCEDURES
- 014000 QUALITY REQUIREMENTS
- 014100 SPECIAL INSPECTION SERVICES
- 014200 REFERENCES
- 015000 TEMPORARY FACILITIES AND CONTROLS
- 016000 PRODUCT REQUIREMENTS
- 017300 EXECUTION
- 017419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
- 017700 CLOSEOUT PROCEDURES
- 017823 OPERATION AND MAINTENANCE DATA
- 017839 PROJECT RECORD DOCUMENTS
- 017900 DEMONSTRATION AND TRAINING
- 018113 SUSTAINABLE DESIGN REQUIREMENTS
- 051200 STRUCTURAL STEEL FRAMING
- 053100 STEEL DECKING
- 054000 COLD-FORMED STEEL FRAMING
- 055000 METAL FABRICATIONS
- 055213 PIPE AND TUBE RAILINGS
- 096813 TILE CARPETING
- 097200 WALL COVERINGS
- 098413 ACOUSTICAL WALL PANELS
- 099113 EXTERIOR PAINTING
- 099123 INTERIOR PAINTING
- 099300 STAINING AND TRANSPARENT FINISHING